A Risk Assessment For Bullhead City Residents Over 65 Years Old

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Certification Statement

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Abstract

Increases in life expectancy has created a situation where more and more seniors are living longer after retirement and requiring more healthcare and support services than ever before. The problem is that Bullhead City has not performed a risk assessment focused on the 65 and older age group. The fire department and other organizations which provide services to seniors need data to more efficiently and effectively deploy finite resources and recruit and direct new sources of volunteer labor to meet future demand. The purpose of this study is to complete a risk assessment of the 65 and older age group in Bullhead City.

Descriptive research was used to answer the following questions: (a) what is the physical health risk for those 65 and older; (b) what is the mental health risk for those 65 and older; (c) what is the dietary health risk for those 65 and older; (d) how does the economic status of those 65 and older affect their ability to maintain their physical and dietary health; and (e) how do environmental factors like low humidity and temperature extremes affect the physical health risk for those 65 and older?

The procedures used to complete this research were a literature review, face-to-face interviews, and survey instruments. The results of this research demonstrate that there was a high degree of communication and cooperation among the organizations engaged in providing services to seniors and that disconnects exist between the perceptions of the providers and the recipients.

The recommendations of this research include seeking out methods to address the social isolation, depression, and mental health risks to seniors in the community; continuing and enhancing quarterly meetings of service providers; and determining and addressing the root cause of the disconnect between perceived support on the part of the providers and the recipients.

Table of Contents

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Introduction

The population served by the Bullhead City Fire Department is already composed of a higher percentage of those over the age of 65 than the national average. The U.S. population trends project an increase in this segment of the population. Although the fire department provides fire safety education specifically to the senior population, no risk assessment has been done to attempt to evaluate the broad spectrum of risks faced by this growing vulnerable population.

The purpose of this study is to complete a risk assessment of the 65 and older age group in Bullhead City. In order to accomplish this task, a descriptive research method was used to answer the following questions: (a) what is the physical health risk for those 65 and older; (b) what is the mental health risk for those 65 and older; (c) what is the dietary health risk for those 65 and older; (d) how does the economic status of those 65 and older affect their ability to maintain their physical and dietary health; and (e) how do environmental factors like low humidity and temperature extremes affect the physical health risk for those 65 and older?

Background and Significance

The author is the Life Safety Outreach Coordinator for the Bullhead City Fire Department. This position was created with the intent of taking the knowledge gained from this research and putting it to use in the district. This position will also be tasked with assisting the Fire Marshal in coordinating fire department efforts with other providers of services to Bullhead City senior citizens.

Providing services to a growing senior population is far beyond the capacity of any single agency. The efforts of the myriad of agencies involved in addressing and mitigating the risks

faced by Bullhead City senior citizens can be more efficiently and effective applied with research and communication. This project is intended to be a first step in providing data necessary to better assist those over 65 in maintaining their independence and quality of life.

Not only is no single agency capable of serving every senior, no single agency has a network to contact every senior even if they had such capacity. The fire department comes into contact with individuals from the target population on a daily basis. Some of those contacted will neither be recipients of services nor even aware of services which they could be receiving to assist them. First responders have a responsibility to think outside the boundaries of the traditional provision of emergency services and develop innovative, value-added ways to link those in need with service providers who can meet those needs. This responsibility is sure to become even more of a pressing issue as the senior population continues to increase in number and their demands further strain systems operating with little or no surge capacity.

This paper is linked with two Executive Analysis of Community Risk Reduction course content items: the executive fire officer as a community risk-reduction strategist and assessing community risk ("EACRR," 2012, p. v). The project supports Goals 1, “Reduce risk at the local level through prevention and mitigation,” and 4, “Improve the fire and emergency services’ professional status,” of the United States Fire Administration’s strategic plan (*Strategic Plan*, n.d., p. 21).

Literature Review

Meri-K Appy, former Executive Director of the Home Safety Council, once said “With adequate resources, there’s no public safety advocate more powerful than firefighters. But this is a time when resources are scarce, so fire departments are going to look to organizations … to put a stake in the ground and say ‘We’re here to help’” ("Battling The Quiet Crisis," 2003, p. 2).

Fire departments across the United States are composed of thousands of individuals who want to help. Effectively providing that help to our aging population segments requires the multi-disciplinary, coordinated efforts of a number of community service agencies, support groups, and others involved in the delivery of services to senior citizens.

In 2005, over 2 million people reached the age of 65 while only 1.7 million people over the age of 65 died. By 2050, the U.S. population segment over the age of 65 is expected to reach 80 million or twenty percent of the population. This population segment is already greater than twenty percent in Bullhead City according to census data. The bulk of this increase will occur between 2010 and 2030 as the Baby Boomer generation reaches their 65th birthdays. Baby Boomers account for nearly one-quarter of the entire U.S. population. The "oldest old", those over 85, is the fastest growing subgroup of those over 65 years of age. By 2050, those over 85 will account for twenty-four percent of the over 65 population and five percent of the total U.S. population (American Burn Association [ABA], n.d.). Life expectancy has increased dramatically since the turn of the twentieth century. During the first half of the twentieth century, life expectancy at birth showed the higher rate of increase. Over the latter part of the century, however, the rate of increase of life expectancy after age 65 has accelerated (Harbert & Ginsberg, 1990).

As of 2000, the vast majority (73 percent) of those over 65 in the U.S. live with their spouse, 19 percent of the population lives alone, and only 4.5 percent (down from 5.1 percent in 1990) live in nursing homes (United States Fire Administration [USFA], 2006). Approximately one-third of those over 65 who do not live in nursing homes live alone and half a million seniors in the U.S. are primary caretakers of their grandchildren (Leahy et al., 2012).

Much of the available information on risk assessment and injury prevention for those over 65 is focused on fire prevention or fall prevention. 2002 statistics showed that 34% of fire deaths and 14% of fire-related injuries were sustained by individuals over 65 (USFA, 2006). Those over 65 are two and one-half times more likely to die in a residential fire than the overall population. This risk increases to five times for those over 85 (Diekman, Stewart, Teh, & Ballesteros, 2010). The increased danger posed by fire to seniors is further illustrated by 2010 statistics revealing that burn unit patients over 60 account for only 11.5% of total cases but 47.5% of the reported deaths. Falls and burns are number one and number two on the list of injury-related cause of death for seniors at home. Illnesses and injuries often leave seniors at higher risk for losing their independence. Decreased ability to care for themselves, increased dependence on others, and financial concerns are all possible forces pushing older adults into institutional care (Leahy et al., 2012).

Many fall injuries result in hip fractures. Twenty-five percent of those who suffer hip fractures will die within a year. The injury and subsequent medical issues are an ever-increasing burden ($19 billion in 2000) on a health care system running near capacity a significant portion of the time (Stevens, Mack, Paulozzi, & Ballesteros, 2008). One out of three senior citizens will experience a fall injury. For women over the age of 85, the risk increases to 50% (Groody, n.d.). Fear of losing independence often drives those over 65 to modify their behavior. "Older adults and caregivers may believe that restriction [of activity] decreases their opportunity to fall, but it also leads to a corollary of adverse outcomes that may actually increase one's risk of falling such as poorer fitness levels, functional decline, compromised balance, and frailty" (Fletcher, Guthrie, Berg, & Hirdes, 2010, p. 190).

Unfortunately, fire and falls are not the only risks faced by senior citizens. The risk of living in poverty doubles for individuals over the age of 65 (ABA, n.d.). An estimated one and a half million seniors are the victims of elder abuse each year (Stolzenberg, 1998). As many as 85% of the population over age 65 suffer from one or more chronic diseases (Leahy et al., 2012). The use of numerous prescription medications, sometimes combined with supplements, can have a significant influence on seniors risk of falls and can affect alertness, coordination, and even judgment (Kronfol, n.d.). The risk for some is even higher because they are seniors caring for seniors. Caregiver falls often occur when the caregiver is assisting their loved one up out of a chair, out of the tub, or up or down stairs. This aspect of senior injury prevention has been the subject of virtually zero research (Groody, n.d.).

Most senior citizens are determined to remain as independent as possible and remain in their own home as long as they are able. It is common for those over 65 to attempt to conceal any frailty and avoid asking for help out of fear they will be placed in an institution, even going so far as to not report abuse. Harbert and Ginsberg boldly state “If the elderly are to survive, society must provide services or programs to subsidize them as independent economic units” (1990, p. 6).

By 2040, physician visits by seniors are projected to increase 160% over their 1980 numbers, days in the hospital will increase 200% over this same period, and the number of nursing home residents could grow by 280%. If something does not change, pensions and healthcare costs will account for over sixty percent of the federal budget (Harbert & Ginsberg, 1990). Supporting senior citizens ability to remain independent and providing them with tools to stay healthier longer not only improves their quality of life and gives them the opportunity to contribute to society longer, but also decreases the burden on the healthcare system. As

previously stated, these objectives are going to require a coordinated effort; no single agency can address every concern or meet every need.

There are a number of actions that can be taken to reduce fall risk and the subsequent medical issues including:

- Encouraging the senior's primary physician to review medications (particularly psychotropic medications and those known to cause postural hypotension) and reduce or withdraw as many as possible
- Ensure seniors stay hydrated and wear elastic stockings or abdominal binders where indicated
- Vitamin D supplementation
- Correcting physical eye problems
- Having feet assessed for issues which could impair gait
- Exercise programs focused on strength training and balance and gait – Tai Chi is among the best (American Geriatrics Society [AGS], 2010).

One of the major challenges in actually implementing strategies which are known (and, in many cases have been proven) to work is the state of isolation many of those over 65 live in. "Of all adults with difficulties performing two or more activities of daily living, twenty percent say they do not have regular interaction with family and thirty-six percent do not have regular interaction with friends" (USFA, 2006, p. 22). Reaching individuals without a social network is a challenge. Diekman et al cites "two cornerstones for effective public health practice: (a) conducting a community needs assessment to identify important health issues and inform the development of prevention programs and (b) applying a program evaluation framework" (2010, p. 224). Reaching out to senior citizens has been found to best be accomplished when seniors

themselves deliver the message. When attempting to engage those over 65 in prevention programs, interest may be best solicited by tying the message to something of value to the homebound individual, such as a pet who may suffer should the person fall or the impact the person's injury or death may have on their loved ones (Abbott, n.d.).

Once the risk assessment findings have been used to develop a plan for reducing risk in the community, the literature has many recommendations for tailoring information to the older adult population. The "ADPIE Model" requires (A)ssessing factors which may affect the ability of the older adult to learn, (D)iagnosing any special barriers, (P)lanning necessary modifications to allow for the factors and/or barriers found, (I)mplementing the learning, and then (E)valuating the expected outcomes to ensure the message was delivered (ABA, n.d.). Contrary to popular belief, learning ability does not decrease with age although the rate may be slower. Methods of teaching may need to be modified, but advanced age does not, of itself, provide a barrier to learning (Harbert & Ginsberg, 1990).

Many new programs have been created in the recent past designed to assist the elderly, yet only a small portion of those eligible for services actually utilize them. Mass media – newspapers, television, radio – is often not effective at reaching the target population. Outreach to these populations is time- and planning-intensive. Harbert and Ginsberg outline four basic steps: (a) locate the target population, (b) contact the individuals and make them aware of the services being offered, (c) provide assistance to ensure the clients have access, and (d) follow-up to make sure the service was actually received. The most effective means of reaching seniors may be through informal communications systems. Those with consumer-provider contacts – grocery store employees, pharmacists, barbers or beauticians, and delivery people – may have the information necessary to find isolated senior citizens. Mail carriers, police officers, church

congregations, healthcare providers, and organizations like the American Legion, DAV, VFW, Elks, or Moose may also be important partners (Harbert & Ginsberg, 1990).

Once the target audience is identified, relationships must be established with the community, rapport must be built with the clients, and meaningful material must be developed to enlist the participation of seniors (Diekman et al., 2010). As previously mentioned, seniors are often the most effective at reaching seniors. Many of those over 65 find great reward in volunteering their time. This not only benefits the senior, but helps replace younger female volunteers ("stay-at-home moms") now in the workplace due to societal changes. Wayne Matson, retired Air Force Colonel stated "If you're not committed to something, you're just taking up space" (Harbert & Ginsberg, 1990, p. 19). A few seniors with that kind of passion for helping other seniors could make a huge difference in their community if partnered with a group of social services providers.

The review of available research on the topic of risks to seniors reinforced the author's perception that not only are the risks they face too complex to be addressed by only fire and fall prevention programs, but also clearly illustrated the need for an all-hands approach to addressing senior issues similar to the all-hazards approach to preparedness practiced by emergency responders and emergency management practitioners. The data also vividly illustrates the critical nature of addressing senior healthcare issues as rapidly as possible. The U.S. healthcare system does not have the capacity to deal with an ever-increasing burden. Action must be taken to attack the problem with outreach, education, and prevention.

Procedures

This project started with an extensive literature review. While on campus at the National Fire Academy for the classroom portion of Executive Analysis of Community Risk Reduction,

the resources of the Learning Resource Center were utilized to obtain several documents that were not available digitally over the internet. Multiple documents were culled from the internet via search engines and added to the body of knowledge.

After completing the bulk of the literature review, a series of questions were formulated in order to conduct interviews with individuals providing services to senior citizens in the Bullhead City community. The interview questions are found in Appendix A. The agencies whose representatives were interviewed are listed in Appendix B. The purpose of the face-to-face interviews was to attempt to measure the perceived risks to Bullhead City seniors in order to develop a survey instrument. The responses from the face-to-face interviews were used to create the survey instruments found in Appendices C and D. This survey was distributed back to the interviewees, several were completed by seniors present at the Bullhead City Senior Center for lunch, and a number were delivered to homebound seniors by Meals On Wheels drivers. The survey results have been entered into a spreadsheet and are found in Appendix E.

The first part of the survey attempted to rank the risks identified during the interviews by order of importance. The second part of the survey was designed to measure the perceived support in the community for each of the risks. Once all the surveys were returned, the goal was to compare the perception of those providing the services with the recipients of the services, those over 65 residing in the Bullhead City area.

The list of agencies interviewed was developed after the bulk of the literature review was complete and in cooperation with Fire Marshal Jim Dykens of the Bullhead City Fire Department. During the course of each interview, the interviewee was also provided a working list of the agencies being contacted and asked if there were any other individuals that should be included.

It is assumed that the respondents to the service provider surveys were, in fact, providers of services to senior citizens because the surveys were hand-delivered directly to the individual interviewed or to their office with a request that they be forwarded to the interviewee. Since the author did not, however, watch the survey instruments being filled out. The survey recipients were provided with a pre-addressed, stamped envelope so that they could return the surveys to the author anonymously. The recipients of the services were asked two demographic questions on the survey. The first verified that survey participants were over the age of 65 and the second sought to determine whether they lived alone, with a spouse, etc. Some of the recipient surveys were distributed face-to-face at the Senior Center while the remainder were given to participants by the meal delivery driver. Those at the Senior Center were given the opportunity to complete their surveys without direct supervision by the author. Surveys were collected and placed into a stack by an assistant in order to ensure anonymity of survey responses. The surveys distributed to homebound clients were collected by the driver and returned to the author via U.S. Mail. The author received no identifying information on any of the homebound clients.

This study was limited by several factors. The return rate from the individuals involved in the provision of services to senior citizens was 66%. Nine individuals were interviewed and surveys distributed, six of those surveys were returned. The number of surveys distributed to service recipients was much lower than originally planned. All ten of the surveys handed out in person at the Senior Center were completed. The meal delivery program was provided with twenty surveys to be distributed to a clientele numbering over one hundred. For reasons unknown, only four of the surveys were completed and returned to that author. Had time allowed, more surveys could have been distributed to other homebound clients in an attempt to reach a larger portion of the target population. There was also some confusion on the part of the

survey respondents in correctly responding to the survey questions. Some of the responses had to be discarded due to the error in filling out the form. Again, with additional time, the survey instrument could have been reworked to reduce the potential for confusion and/or more face-to-face interviews could have been conducted with the service recipients themselves. Due to HIPAA and other constraints on sharing information, however, there was insufficient time and resources available to reach the majority of the target population in their homes for face-to-face completion of the survey instrument.

Results

The face-to-face interviews provided eleven risks perceived by those providing services to seniors as the most pressing. The risks identified were: Alzheimer's, depression, falls, financial, fire, heat-related, healthcare, obesity, physical security, poor nutrition, and social isolation. Providers were interestingly unanimous in their ranking of physical security as tenth, second to last. The risk of fire also scored as a very low perceived threat with an average of 8.0. Social isolation and falls were at the top of the list. The risks, from the provider perspective, were ranked as follows:

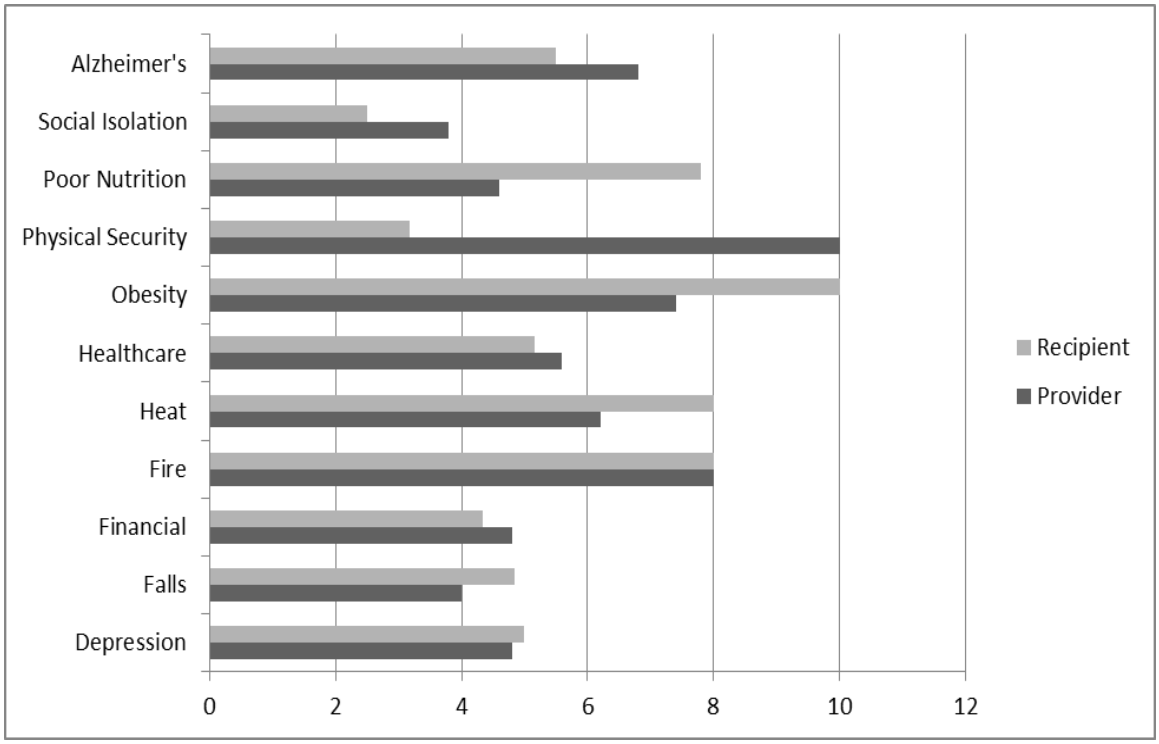
1. Social isolation (3.8)
2. Falls (4.0)
3. Poor nutrition (4.6)
4. Depression (4.8)
5. Financial (4.8)
6. Healthcare (5.6)
7. Heat-related (6.2)
8. Alzheimer's (6.8)

9. Obesity (7.4)
10. Fire (8.0)
11. Physical security (10.0)

Recipients also placed social isolation clearly at the top of their list of perceived risks and ranked the risk of fire identically at an average of 8.0. From there, however, the two lists diverged dramatically as shown below:

1. Social isolation (2.5)
2. Physical security (3.2)
3. Financial (4.3)
4. Falls (4.8)
5. Depression (5.0)
6. Healthcare (5.2)
7. Alzheimer's (5.5)
8. Poor nutrition (7.8)
9. Fire (8.0)
10. Heat-related (8.0)
11. Obesity (10.0)

Graph 1



Support available to deal with specific risks was ranked from high level of support (1) to low level of support (4). The survey responses for provider perception of support for those risks were:

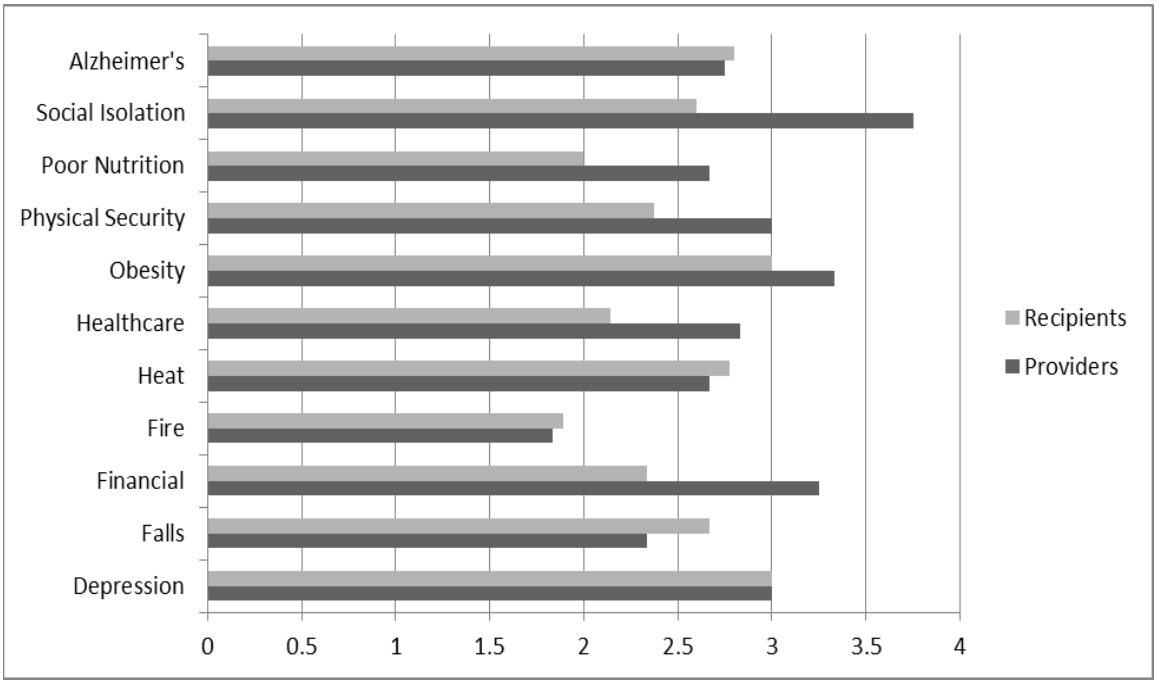
1. Fire (1.8)
2. Falls (2.3)
3. Poor nutrition (2.7)
4. Heat-related (2.7)
5. Healthcare (2.8)
6. Alzheimer's (2.8)
7. Physical security (3.0)
8. Depression (3.0)
9. Financial (3.3)

10. Obesity (3.3)
11. Social isolation (3.8)

Perceived support from the recipient perspective:

1. Fire (1.9)
2. Poor nutrition (2.0)
3. Healthcare (2.1)
4. Financial (2.3)
5. Physical security (2.4)
6. Social isolation (2.6)
7. Falls (2.7)
8. Alzheimer’s (2.8)
9. Heat-related (2.8)
10. Depression (3.0)
11. Obesity (3.0)

Graph 2



The average of the averages across all eleven risk elements was lower for the recipients (2.5) than for the providers (2.9).

Ten of the recipient respondents live alone, two live at home with their spouse, and one recipient lives at home with a family member or roommate.

What is the physical health risk for those 65 and older? "Physical health risk" was further divided into falls, healthcare, and obesity in the survey. Fall risk was ranked second by providers and fourth by recipients. This would indicate that in least one aspect, there is a high physical health risk for those 65 and older. What is the mental health risk for those 65 and older? Depression was ranked fourth and fifth in the survey results. These results indicate that both providers and recipients believe a fairly high level of mental health risk exists. What is the dietary health risk for those 65 and older? Poor nutrition was ranked third by the providers, but near the bottom by recipients and both groups ranked the obesity risk low. The perceived risk for those over 65 in Bullhead City is low for dietary health risks. How does the economic status

of those 65 and older affect their ability to maintain their physical and dietary health? Financial risk ranked fifth and third in the results with access to healthcare ranked sixth on both. Though the recipients perceive more financial risk in the community, it apparently is not impacting the target population's access to healthcare. The recipients also have a high degree of perceived support for their access to healthcare in the community. How do environmental factors like low humidity and temperature extremes affect the physical health risk for those 65 and older? Although the heat in the Bullhead City community can reach extremes in the summertime, the perceived risk associated with heat-related health risks is next to last on the recipients' list.

Discussion

One of the most motivating and unexpected findings during the interview process of this project was the current level of cooperation and communication which already exists in the Bullhead City area between agencies which provide services to seniors. As discussed in the literature review, the magnitude of addressing risk to seniors requires a multi-disciplinary, coordinated effort by a broad spectrum of service agencies. The Western Arizona Council Of Governments' (WACOG) Regional Council On Aging (RCOA) and the Mohave County Ombudsman's office have been instrumental in coordinating monthly rotating meetings in the county. With three locations, there is a meeting quarterly in Bullhead City. The monthly/quarterly meetings are an opportunity for the various agencies offering services to seniors to network and compare notes.

A very high number of recipient respondents, 76.9%, indicated they live alone. This number is nearly double the 34.3% expected for the community according to U.S. census data. Further research would have to be done to determine the causal relationship between those

surveyed and the increased incidence of one-person households. Two potential hypotheses: (a) individuals seeking out lunch at the senior center self-selected themselves into the survey group by choosing to dine in a social setting instead of alone (and individuals who live with a spouse or other individual chose to dine at home with that person instead of venturing out to the senior center) or (b) there are a higher percentage of single people in the group receiving some form of assistance from the senior nutrition center.

The survey respondents ranked the risk of fall injury fairly high. This correlates with previous research and the focus on fall prevention by numerous state and federal agencies as a priority. Reducing the incidence of fall injuries in any community will dramatically decrease the burden on the healthcare system and improve quality of life for the senior citizens living there. The perception of support for mitigating fall risk indicates there is a disconnect in Bullhead City between the services offered and residents understanding of the services available. Providers ranked support for fall risk second while it ranked seventh with recipients.

The finding that stands out most prominently to the author is the fact that social isolation and depression ranked high with both survey groups as a perceived risk and low with both groups as having support. If there is a call to action of this project, it has to be to work on finding workable tactics to begin to address this gap. In the interview process, one of the interviewees shared that once a person is diagnosed with any dementia, they are no longer eligible for state-supported mental health treatment, even for pre-existing mental illness. This means that some of the very most vulnerable of an already vulnerable population, senior citizens with underlying mental illness, are being left to fend for themselves in their time of need. There is a high probability that these individuals are living alone, attempting to cope with a new onset

of dementia, and then handed the added burden of a return of mental health symptoms previously kept at bay with medication and/or therapy to which they no longer have access.

To once again quote Harbert and Ginsberg:

Old people's isolation is similarly explained as an appropriate response to people whose physical conditions are rendering them socially, economically, and spiritually obsolete. … A perspective on aging that foresees the possibility of spiritual growth outweighing physical decline is a more favorable view. Our society view the devaluation of old age as a law of nature. … The tragedy is not that each of us must grow old and die, but that the process of doing so has been made unnecessarily – and, at times, excruciatingly – painful, humiliating, and debilitating. (1990, p. 34-36)

Recommendations

Further research needs to be done to determine where the disconnect lies for risks where the support level perceived by the providers does not match the support level perceived by the recipients. One of two things is occurring; either the recipients are not aware of the services available or the recipients do not feel the available services are meeting the need. Regardless of which is the case, the providers should either redouble their communications to make recipients aware of the services available or attempt to create programs which will address the unmet need.

Quarterly meetings of the various agencies involved in providing services to seniors should, without even the slightest doubt, continue. Every effort should be made to disseminate knowledge of these meetings to <u>any</u> group involved in providing senior services. Fire department involvement should be a part of the plan. In the future, fire department involvement in injury prevention activities will likely only increase as scarce resources are directed to activities which have the highest potential for payoff. Activities which could reduce repeat 911

responses, reduce hospital stays, and improve quality of life for senior citizens will certainly be made a priority; especially when an increasing percentage of the population as well as a majority of fire district board members belong to the over 65 population segment.

Building on the high degree of cooperation already in place between senior services providers, a multi-disciplinary inspection tool should be developed as a force multiplier for all the agencies. If hospice is looking for fire hazards and fire personnel are looking for fall hazards and occupational therapists are cognizant of clients who could benefit from a hospice referral, everyone wins. There are many examples of quality documents available on the internet which could be customized to fit the needs of the Bullhead City community. The form should be simple, easy to use, and should include a tracking mechanism to ensure seniors receive the assistance they need.

Finally, a recommendation to address the isolation and depression findings from the survey which echoed much of the research from the literature review. Humans need contact with other humans. Studies of every age group from infants to elders have confirmed time and time again throughout history, humans are social animals who will not thrive without interaction with others. Bullhead City is fortunate to have a large number of senior citizens who are healthy and do not have to rely on social services safety nets for their nutritional needs, access to healthcare, or to ensure their basic daily needs are met. This is a tremendous resource for the community, particularly the less fortunate seniors in the community, to tap into. Every effort should be made to develop a volunteer group with a mission to improve the standard of living for <u>all</u> seniors in the community. Whether experiencing role loss after retirement or not, many seniors have a lot of energy, a lot of time, and can only play so much golf. Harbert and Ginsberg go so far as to state “A friendly visiting service for the homebound may be as important as money, because it

enables the older person to remain in familiar surrounding rather than an institution" (1990, p. 44).

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Appendix A

During our interview, I would like to record your thoughts on the following five questions. Please feel free to share additional information on other risks senior residents face which are not addressed.

1. What are the risks to physical health for Bullhead City residents over the age of 65?
2. What are the mental health risks for Bullhead City residents over the age of 65?
3. What health risks related to diet do Bullhead City residents over the age of 65 face?
4. How do economic factors affect Bullhead City residents over the age of 65 ability to maintain their health?
5. How do environmental factors (like low humidity and extreme high temperatures) affect the physical health risks for Bullhead City residents over the age of 65?

I will utilize the information gleaned from interviews to create a survey instrument which will measure the perceptions of seniors in the community and compare those perceptions to the observations of those providing services to seniors. I plan to seek survey participants at the Bullhead City Senior Center during or immediately following activities and will also be looking for opportunities to do in-home interviews in order to reach residents who do not participate in Senior Center activities. If you would be willing to refer me to one or more of your clients for a brief, in-home survey; your assistance in that regard would be appreciated.

I have scheduled or am in the process of scheduling interviews with representatives from the following list of organizations. If you have suggestions for agencies or individuals who would be able to contribute a perspective which may not be captured in discussions with those on the list, your input would be extremely helpful.

- BHHS Legacy Foundation
- Bullhead City Fire Department
- Bullhead City Police Department
- Bullhead City Senior Center
- Comfort Keepers
- Disabled American Veterans
- Davis House
- Meals On Wheels
- Mohave County Adult Protection
- Pulmonary Hypertension Association
- Pulmonary Support Group
- River Gardens Rehab & Care Center
- Western Arizona Regional Medical Center (Emergency Department, Discharge Planning, Senior Circle)
- Western Arizona Council of Governments, Regional Council on Aging (WACOG RCOA)

Appendix B

Service Provider Agencies Interviewed

Arizona Adult Protective Services

Bullhead City Fire Department

Bullhead City Police Department

Bullhead City Senior Center (Meals On Wheels program)

Disabled American Veterans

Hospice of Havasu

Pulmonary Hypertension Association

Pulmonary Support Group

Western Arizona Council of Governments' Regional Council on Aging

Appendix C

Provider Cover Letter and Survey

Dear,

Thank you for participating in the interview portion of my project. The responses from the interviews were used to create the attached survey. I have begun the writing process for the project, but will need surveys back soon in order to include them. If you could find a few minutes to complete the survey and return it to me in the self-addressed, stamped envelope before July 31st, it will allow me to complete the final draft and mail it off with a couple of weeks to spare before the deadline.

Thanks again for your assistance in this project. If you would like a copy of the project upon completion, you may request one by emailing medicmurse@gmail.com.

Sincerely,

Michael R. Branum, MPA, NREMT-P, RN

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Your assistance in studying the risks faced by Bullhead City senior citizens would be very much appreciated. Your responses will be combined with the responses from other senior services providers and compared to responses from senior citizens in the area to identify perceived gaps in services. This survey should only take a few minutes to complete. Your responses will remain completely confidential.

Below is a list of risks identified in interviews with local senior services providers. If you believe there is a risk that is not represented here, please feel free to use the back of one of the pages to relay that or any other information that you feel is important in this risk assessment process.

Depression / increased risk of suicide due to social isolation, loneliness, poor health, lack of mental health treatment, reluctance to seek treatment, etc.

Fall risks due to lack of home maintenance (broken trim/furniture, uneven floors, etc.) and proper access (hand rails, ramps, etc.)

Fire risks (lack of knowledge of fire safety, oxygen use (particularly when individual is a smoker), electrical hazards due to lack of maintenance, absence of working smoke detectors, low moisture content in older structures, etc.)

Health risk due to heat exposure (broken air conditioning or air conditioning turned off to reduce electricity expenses, thermostat set too high in winter, dehydration)

Inadequate access to healthcare services/information (lack of transportation, lack of faith in healthcare providers (both clinicians and home health providers), inability to communicate with healthcare providers where English is a second language, fear of leaving house, reluctance to call 911, increased cost of prescription medications, etc.)

Increased risk of injury due to undiagnosed/untreated Alzheimer's disease

Lack of financial security (fixed income, scams/cons, questionable decisions, assistance to children/grandchildren, etc.)

Lack of physical security (working locks on doors and windows)

Obesity (decreased physical activity (due to injury, high temperatures, high allergen counts/dust levels, etc.), apathy, poor nutrition, lack of knowledge, etc.)

Poor diet due to financial situation (food costs (particularly Boost/Ensure-type nutritional supplements, transportation costs, etc.))

Poor diet due to lack of access (poor health limits ability to leave residence to shop, fear of leaving house, etc.)

Poor recovery from medical procedures (discharged without support due to changes in the healthcare system)

Social isolation (lack of family nearby, poor health, respiratory issues (high allergen count), etc.)

Please rank the perceived risks from 1 (highest risk) to 11 (lowest risk):

	Depression / increased risk of suicide
	Falls
	Financial security
	Fire risks
	Heat exposure
	Lack of access to healthcare
	Obesity
	Physical security
	Poor nutrition
	Social isolation
	Undiagnosed/untreated Alzheimer’s

Please rate the availability of support services in the Bullhead City area for each of the perceived risks. Check one box for each row.

Perceived Risk	High level of support	Some support	Poor Support	Little or no support	No opinion
Depression / increased risk of suicide					
Falls					
Financial security					
Fire risks					
Heat exposure					
Lack of access to healthcare					
Obesity					
Physical security					
Poor nutrition					
Social isolation					
Undiagnosed/untreated Alzheimer's					

Appendix D

Recipient Cover Letter and Survey

Dear Sir or Madam,

I am working with the Bullhead City Fire Department on a project for the National Fire Academy. The project is a risk assessment for senior citizens in Bullhead City. A number of individuals who provide services to those over 65 have been interviewed. The responses to interview questions were used to develop a survey which is attached to this letter.

This survey is being used to hopefully better measure the perceptions of risks to Bullhead City senior citizens. I have begun the writing process for the project, but will need surveys back soon in order to include them. If you could find a few minutes to complete the survey and return it to me in the self-addressed, stamped envelope before July 31st, it will allow me to complete the final draft and mail it off with a couple of weeks to spare before the deadline.

Thanks again for your assistance in this project. If you would like a copy of the project upon completion, you may request one by emailing medicmurse@gmail.com.

Sincerely,

Michael R. Branum, MPA, NREMT-P, RN

Font size has been decreased from the original in order to fit on the page

Your assistance in studying the risks faced by Bullhead City senior citizens would be very much appreciated. Your responses will be combined with the responses from other senior citizens and compared to responses from senior services agency representatives in the area to identify areas for improvement. This survey should only take a few minutes to complete. Your responses will remain completely confidential.

Below is a list of risks identified in interviews with local senior services providers. If you believe there is a risk that is not represented here, please feel free to use the back of one of the pages to relay that or any other information that you feel is important in this risk assessment process.

Depression / increased risk of suicide due to social isolation, loneliness, poor health, lack of mental health treatment, reluctance to seek treatment, etc.

Fall risks due to lack of home maintenance (broken trim/furniture, uneven floors, etc.) and proper access (hand rails, ramps, etc.)

Fire risks (lack of knowledge of fire safety, oxygen use (particularly when individual is a smoker), electrical hazards due to lack of maintenance, absence of working smoke detectors, low moisture content in older structures, etc.)

Health risk due to heat exposure (broken air conditioning or air conditioning turned off to reduce electricity expenses, thermostat set too high in winter, dehydration)

Inadequate access to healthcare services/information (lack of transportation, lack of faith in healthcare providers (both clinicians and home health providers), inability to communicate with healthcare providers where English is a second language, fear of leaving house, reluctance to call 911, increased cost of prescription medications, etc.)

Increased risk of injury due to undiagnosed/untreated Alzheimer's disease

Lack of financial security (fixed income, scams/cons, questionable decisions, assistance to children/grandchildren, etc.)

Lack of physical security (working locks on doors and windows)

Obesity (decreased physical activity (due to injury, high temperatures, high allergen counts/dust levels, etc.), apathy, poor nutrition, lack of knowledge, etc.)

Poor diet due to financial situation (food costs (particularly Boost/Ensure-type nutritional supplements, transportation costs, etc.))

Poor diet due to lack of access (poor health limits ability to leave residence to shop, fear of leaving house, etc.)

Poor recovery from medical procedures (discharged without support due to changes in the healthcare system)

Social isolation (lack of family nearby, poor health, respiratory issues (high allergen count), etc.)

Please rank the perceived risks from 1 (highest risk) to 11 (lowest risk):

	Depression / increased risk of suicide
	Falls
	Financial security
	Fire risks
	Heat exposure
	Lack of access to healthcare
	Obesity
	Physical security
	Poor nutrition
	Social isolation
	Undiagnosed/untreated Alzheimer's

Please check one box in response to each of the following two questions:

I am 65 years of age or older:

Yes
No

I live:

At home alone
At home with spouse/mate
At home with children
At home with other family / roommate(s)
In a facility with other senior citizens

Please rate the availability of support services in the Bullhead City area for each of the perceived risks. Check one box for each row.

Perceived Risk	High level of support	Some support	Poor Support	Little or no support	No opinion
Depression / increased risk of suicide					
Falls					
Financial security					
Fire risks					
Heat exposure					
Lack of access to healthcare					
Obesity					
Physical security					
Poor nutrition					
Social isolation					
Undiagnosed/untreated Alzheimer's					

Appendix E

Provider Perceived risks

	Depression	Falls	Financial	Fire	Heat	Healthcare	Obesity	Physical Security	Poor Nutrition	Social Isolation	Alzheimer's
	1	1	2	3	1	2	1	1	2	2	1
	1	7	2	9	4	11	8	10	5	6	3
	4	3	6	9	11	1	7	10	5	2	8
	4	5	7	8	3	11	9	10	2	6	1
	9	1	7	5	8	2	6	10	3	4	11
	6	4	2	9	5	3	7	10	8	1	11
AVG	4.8	4.0	4.8	8.0	6.2	5.6	7.4	10.0	4.6	3.8	6.8

This recipient did not use all of the numbers. The average does not reflect this response.

Provider Perceived Support

	Depression	Falls	Financial	Fire	Heat	Healthcare	Obesity	Physical Security	Poor Nutrition	Social Isolation	Alzheimer's
	3	2	4	2	4	4	4	4	4	4	3
	4	3	3	2	3	3	4	4	3	4	2
	3	3	4	2	2	3	3	2	2	3	3
	3	1	2	1	2	2	4	3	1	4	3
	2	2		2	3	2	2	2	2		
	3	3	3	2	2	3	3	3	4	4	3
AVG	3.0	2.3	3.3	1.8	2.7	2.8	3.3	3.0	2.7	3.8	2.8

1 = high degree of support, 4 = low degree of support

Null values for the support responses from both providers and recipients were not factored into the averages.

Recipient Perceived risks

	Depression	Falls	Financial	Fire	Heat	Healthcare	Obesity	Physical Security	Poor Nutrition	Social Isolation	Alzheimer's
	6	9	11	8	10	6	9	1	1	7	9
	11	4	1	5	2	10	7	6	8	3	9
	11	1	1	11	1	11	11	11	11	12	11
	2	8	1	7	2	1	3	3	1	5	8
	8	10	10	5	5	5	5	8	5	10	5
	3	7	1	6	1	9	6	5	6	4	8
	5	1	11	3	5	11	11	11	11	11	5
	11	1	1	1	1	1	1	1	1	11	1
	4	8	5	9	10	1	11	3	7	2	6
	6	5	1	9	10	7	11	4	8	2	3
	3	6	7	9	10	4	11	2	8	1	5
		1	6			5		2		4	3
	1	5	6			4		2	8	3	7
AVG	5.0	4.8	4.3	8.0	8.0	5.2	10.0	3.2	7.8	2.5	5.5

Shaded cells are recipients who did not rank their responses from 1 to 11.

This recipient chose not to rank the risks at all.

The bottom two recipient responses ranked their top choices, but did not rank all eleven risks. The responses given were figured into the average for those risks.

Recipient Perceived Support

Depression	Falls	Financial	Fire	Heat	Healthcare	Obesity	Physical Security	Poor Nutrition	Social Isolation	Alzheimer's
2	3		2	3			3	2		3
3	4	3	2	4			1	2	4	
	1									
4	4			3	1			1	3	
		1	1	1						
2	1	2	2	2	1	3	2	2	2	2
3	4	2	2	4		3	1	2	4	
	2		1	1		3	2	2	2	2
4	4	3	2	4	3		3	2	2	4
3	3	3	3	3	3	3	3	3	3	3
	2	2			3		4	2	2	
	2	3	2		2				2	
	2	2			2			2	2	
AVG 3.0	2.7	2.3	1.9	2.8	2.1	3.0	2.4	2.0	2.6	2.8

Recipient Home Situation

Alone	Spouse	Children	Other Family or Roommate
	X		
X			
			X
X			
X			
X			
X			
	X		
X			
X			
X			
X			
X			
TOTAL 10	2	0	1

One recipient did not indicate their home situation.